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ABSTRACT

A six-part marine science simulation game for 4-H members concerning land use in a hypothetical community is provided. The major problem is to decide what are some possible uses of a three-mile (1,250 acre) Marsh Beach which the city recently purchased. Members assume the roles of decision-makers in the simulated environment and compete for certain objectives according to specified procedures and rules. In parts one through five, small groups study background information, list suggested land uses, plan a strategy, prepare a 3-minute presentation, and present group reports. In the final part, learners determine if the game met three basic characteristics of simulation games: (1) clearly defined problem; (2) identifiable factors affecting decisions; and (3) identification of individuals/groups with different interests who will be affected by the decisions. A separate "Agent's Supplement" is also included in which strategies (corresponding to the six parts in the member's guide) for conducting the simulation are outlined. (Author/JN)

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4-H MARINE SCIENCE Simulation Game

Member's Guide

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Land Use for Marsh Beach

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FAES 4-H(S)-2

Members Guide

What is the Best Use for Marsh Beach? *

by Bobby N. Irby, Man and the Gulf of Mexico. Topic I: Marine and Estuarine Ecology, 1980

During this investigation you are going to participate in a simulation game concerning land use in a hypothetical community. You'll analyze what you have done, and present some ideas which will enable you to think critically about real environmental issues in your community. The techniques you are to use are those of simulating real issues, and combining the element of role-playing. You will assume the roles of decision-makers in a simulated environment and compete for certain objectives according to specified procedures and rules. The major problem of this simulation activity will be:

To decide what are some of the possible uses of the 3-mile (1,250 acre) Marsh Beach which the City has recently purchased at a cost of $3 million. Acreage along the Gulf is sandy beach and dunes and covers one-third of the area. Another third is low brush and pines. The third on the Bay side is marsh.

Part I

For the next 10 minutes you are to read the background information for Seaport City, and list some possible uses of the vacant Marsh Beach area.

The Marsh Beach area, which has been held by the Lonely Estate Trust since its owner died in 1903, has been purchased by Seaport City to prevent it from falling into the hands of developers before the City Planning Board has an opportunity to decide how the property can best benefit the City.

Background Information Sheet: Seaport City

The population is 250,000 and rapidly increasing.

The City's boundaries are being extended, but the suburban fringe is expanding even more rapidly along the coast and up the river with industry moving in adjacent to the interstate highways.

The rapid growth is accompanied by demands for more housing, more jobs, additional municipal services and recreational areas.

The City's harbor is the best within a hundred miles. Though its present harbor facilities are adequate, with good rail and highway links, the channel must be maintained by dredging and will not accommodate the new supertankers.

The surrounding coastal plain is glacial till and is mostly second growth hardwood forest with little timber value. There are a few scattered dairy and poultry farms, but most agricultural produce is shipped in from other parts of the country. The land to the north is hilly with coniferous (evergreen) forest.

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The Clearwater River is not navigable beyond the Old Mill Dam just north of Interstate 1. The city water supply comes from the Clearwater Reservoir which has a protected watershed. Below Interstate 2, the water is used by several industries as process water. (See map.)

Offshore seismic surveys indicate the presence of possible deposits of sand and gravel and petroleum. Special interest groups are concerned with maintaining a scenic coastal environment and the coastal fisheries.

Present sewage treatment and solid waste disposal facilities are operating at maximum capacity.

The City Planning Board is going to hold a public hearing at which all interested groups will be given the opportunity to air their proposals for the utilization of the Marsh Beach area.

List possible uses of the Marsh Beach area below:

_____ _____

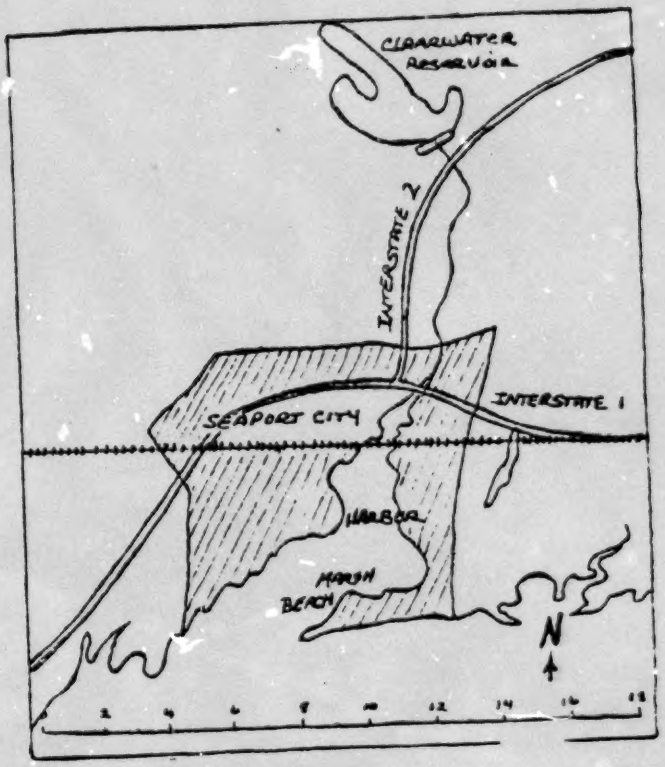
_____ _____

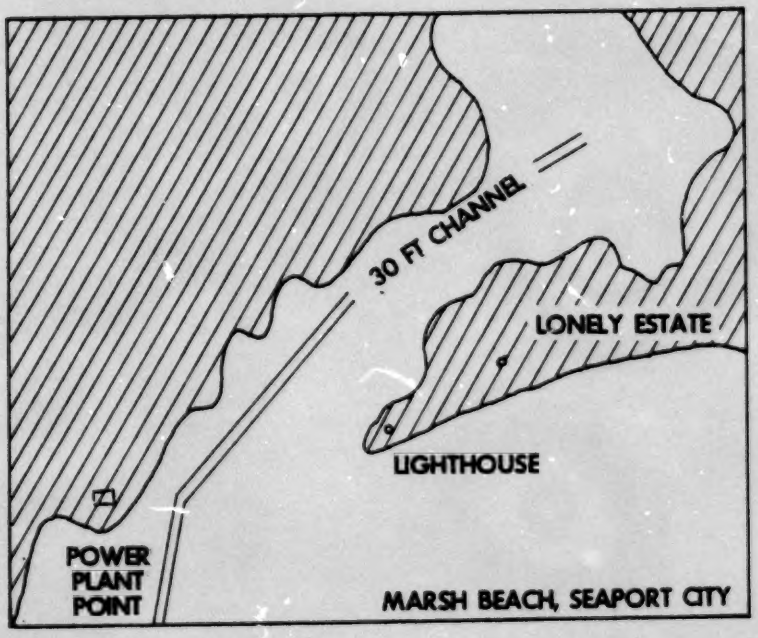
_____ _____

Part II

Your group should now, in a 10-minute period of time, analyze and list possible consequences of different land uses within your assigned land use category.

Use	Advantages to land/people	Disadvantages to land/people


CLEARWATER RESERVOIR
INTERSTATE 2
INTERSTATE 1
SEAPORT CITY
HARBOR
MARSH BEACH
N


30 FT CHANNEL
LONELY ESTATE
LIGHTHOUSE
POWER PLANT POINT
MARSH BEACH, SEAPORT CITY

Part III

(Note to Leaders: Refer to the agent supplement of this simulation game for instructions about how to proceed.)

Your group will now have 20 minutes to plan a strategy and develop a 3-minute presentation to be made at the next City Planning Board meeting. The presentation should be a proposal for developing the undeveloped Marsh Beach Area. Your group must have a visual display such as a land use map drawing as a part of your presentation, and more than one person in your group must help in making the presentation.

On a separate sheet of paper outline your group's presentation.

Part IV

Each group select a spokesperson to make your presentation. Keep your presentation to 3 minutes.

Part V

An adequate discussion of the questions in Part V is one of the most important aspects of the activity because it emphasizes that we need a variety of information and data before we can intelligently make a land management or environmental decision to best meet the needs of people and their environment. This question list has all the elements that need to be considered in studying a local environmental issue or concern.

1. Did new leadership emerge during this session? What factors enabled this to happen? Call on staff observers if used.

2. Did your group work as a team? What did your group do to insure participation by all members of the group?

3. What happened in the groups? How did you feel as a person? What about the criteria used? How did each observer see the interaction in the groups?

4. What additional data would you have liked to have had for your groups? List on board, e.g.: topography, vegetation, economy of area, railroad, shopping center, adjacent land, climate, soil survey, historical information, floor plain, wildlife, interest of board of control, money available, educational needs, regulations by State, existing zoning, political climate, population information (age needs, race, jobs). What elements in the community discussion might support each interest?

Part VI

One group of people working with simulation games has identified at least three basic characteristics of most simulation games:

a. There is a problem to be solved.

b. The factors affecting the decisions are identifiable.

c. The group or individuals with different interests who will be affected by the decision can be identified.

Let's see if the game we just played had these components.

a. What was the clearly defined problem in the Land Use Alternatives simulation? _____

_____

b. What factors influenced the decision in the Land Use Alternatives Simulations? _____

_____

c. We assigned groups to fit each role in the Land Use Alternatives Simulation, but we all helped develop those roles from the items we listed on the chart. What group of individual roles were identified? How were they identified?

_____

_____

_____

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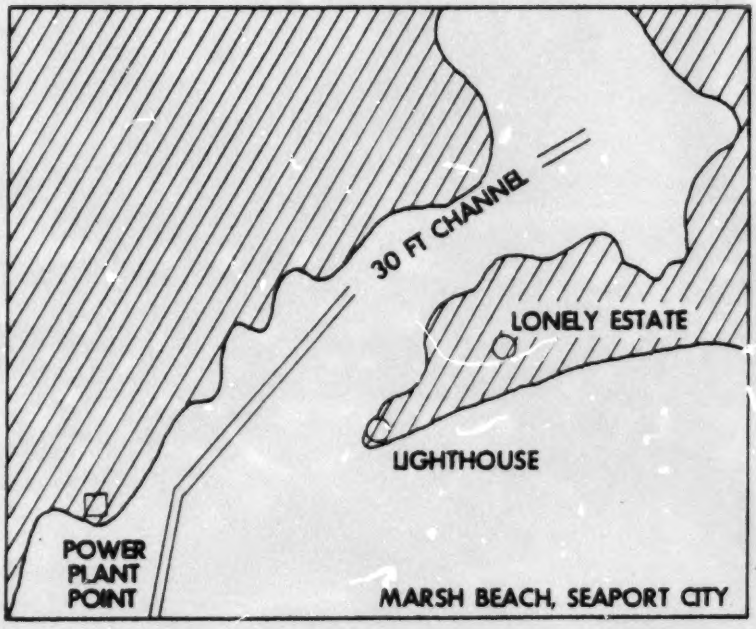
4-H MARINE SCIENCE
Simulation Game
Agent's Supplement



Land Use for Marsh Beach

The Alabama Cooperative Extension Service

"EDUCATION IS OUR BUSINESS"

SE 040 204

Agent's Supplement

What is the Best Use for Marsh Beach?*

by Bobby N. Irby, Man and the Gulf of Mexico. Topic I: Marine and Estuarine Ecology, 1980.

Simulations are operating models of real life situations. They may be about physical or social situations.

Most simulations for club meetings involve gaming. A game is defined as something enjoyable--however serious it might be--involving competition for specified objectives and observing rules.

Some simulation games are based on environmental issues. What are some benefits of using simulation games as an instructional technique for investigating environmental problems?

They're fun.

They get people involved.

They are a logistically easy way of helping to prepare people for becoming involved with solving environmental problems.

People analyze cause-and-effect relationships of environmental issues.

People are put in role-playing situations where they have to suggest alternative solutions to environmental concerns.

People are forced to evaluate the consequence of decisions in discussion or on paper before these decisions are carried out in reality.

People interact with each other in the decision-making process. So..... simulation games not only develop understandings about problems in the environment and develop awareness and concern about those problems, but they help people develop skills they need for citizen action and involvement in environmental management.

Part I

Introduce the simulation game and background information on Marsh Beach.

(Note: When most people have started to write down uses on Part I, Members Guide, go ahead with question #1.)

1. "What are some possible uses for the undeveloped land?" As people respond, write all comments on board, just as they say them. Don't paraphrase for them unless they are too wordy, in which case, ask: "How shall I write that on the

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chart?" If they give major categories right away, like Recreation or Industry, say, "Can you give me an example of that?" Number the items as you go along--to simplify identification later. When you get 15 or 20 items, STOP.

2. "Which of these uses are similar?" Designate similar uses by letters--A, for all of one type; B, the next, etc. When most are designated with a letter, or the groups seem to run out of thoughts, STOP. It's okay to change the groupings if the students change their minds along the way in #2 above.

3. "What label could we give to all the items in A? What label could we give to Group B? Examples: Recreation, Industrial, Utilities, Housing, Commercial." It's okay if they suggest more than one label for a Group; write them both down.

Part II

Developing Presentations

1. Divide the class or group into the number of categories decided on in #3. There shouldn't be more than 6-10 in each group. Assign each group to one of the use categories.

2. Each group is to represent the special user group assigned. For example--Oilman, Realtor, Environmentalist, Industrialist, Harbormaster, Sportsman, etc.

3. Begin Part II of members guide and inform the students they have 10 minutes to list and analyze possible uses for the vacant land in the assigned category. They may consider those listed on the board in their category plus any other possible uses they can think of for the category.

Part III

Begin Part III and inform the students they have 20 minutes to plan their strategy to present to the City Planning Board. As the students approach Part III, make sure they acknowledge and construct plausible support for their strategy.

1. Ten minutes into Part III, have each group select one of its members to meet together as the City Planning Board. Take the Board into another room, and tell them they will be responsible for hearing the presentations and deciding upon the best one. Their job in the next 10 minutes is to:

a. Develop the criteria they will use in evaluating the proposals.

b. Develop some kind of matrix they can each use while the presentations are being given to record their evaluations.

c. Elect a chairman to preside during group presentations.

		Groups		
		Home owners	Boiler Makers	Ship Owners
Criteria	New government services			
	Economic benefits			
	Tax changes			

Sample Matrix

2. Twelve minutes after groups start planning Part III, remind them they have 8 minutes left to have their verbal and visual presentation ready. Let groups have 5 more minutes to finish if needed.

Part IV

1. Have the City Planning Board enter the room and sit up front. Appoint a timekeeper to cut all presentations off at 3 minutes (give 2-minute warning). Announce: "Because of time, there will be no rebuttals or discussion." But Board may want to ask questions or have rebuttal time after all presentations. However, allow only 5-10 mintes for this part so it won't get out of hand.

2. After #1 is finished, the Board retires for 5-10 minutes to select the best proposal.

3. While the Board is meeting, each small group is to develop a list of criteria they think should be used in choosing between the plans submitted.

4. Seaport City Planning Board announces their decision and gives reasons why.

5. Seaport City Planning Board reads its criteria aloud.

Part V

An adequate discussion of the questions in Part V is one of the most important aspects of the activity because it emphasizes that we need a variety of information and data before we can intelligently make a land management or environmental decision to best meet the needs of people and their environment. This question list has all the elements that need to be considered in studying a local environmental issue or concern. It also includes elements of all the curriculum subject areas (social studies, science, language, arts, etc.).

1. Did new leadership emerge during this session? What factors enabled this to happen? Call on staff observers if used.

2. Did your group work as a team? What did your group do to insure participation by all members of the group?

3. What happened in the groups? How did you feel as a person? What about the criteria used? How did each observer see the interaction in the groups?

4. What additional data would you like to have had for your groups? List on board, e.g.: topography, vegetation, economy of area, railroad, shopping center, adjacent land, climate, soil survey, historical information, flood plain, wildlife, interest of board of control, money available, educational needs,

regulations by State, existing zoning, political climate, population information (age needs, race, jobs). What elements in the community discussion might support each interest?

Part VI

Discuss the questions in Part VI of the members guide.

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